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10/707,184	11/25/2003	Peter T. Kazlas	H-360	1183
26245	7590	12/24/2009	EXAMINER	
DAVID J COLE			NGUYEN, KHIEM D	
E INK CORPORATION				
733 CONCORD AVE			ART UNIT	
CAMBRIDGE, MA 02138-1002			PAPER NUMBER	
			2823	
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			12/24/2009	
			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

dcole@eink.com
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Office Action Summary	Application No. 10/707,184	Applicant(s) KAZLAS ET AL.	
	Examiner KHIEM D. NGUYEN	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14, 15 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14, 15 and 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. The Amendment filed on September 22nd, 2009 is acknowledged. Claims 1-12, 14, 15 and 24-26 are currently pending in this application and claims 1, 12 and 24 are in independent form.

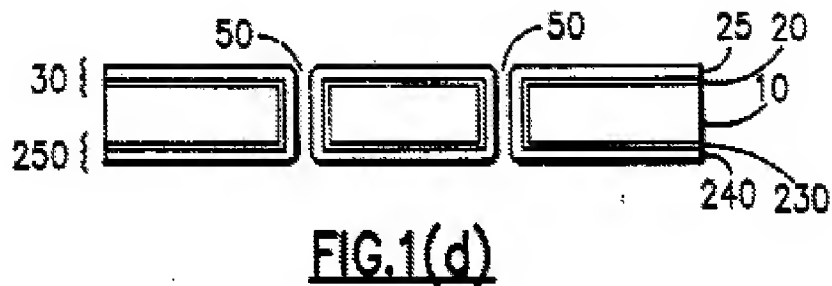
Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-12, 14, 15 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackwell et al. (U.S. Patent 5,288,541) in view of Iwanaga et al. (U.S. Patent 6,033,742).

In re claim 1, **Blackwell et al.** disclose a backplane for use in an electro-optic display, the backplane comprising a patterned metal foil **240** having a plurality of apertures **50** extending therethrough, coated on at least one side with an insulating polymeric material **10**, and having an integrated circuit device **280** provided on the insulating polymeric material **10**, whereby the insulating polymeric material **10** separates the integrated circuit device **280** from the patterned metal foil **240** (see col. 6, line 62 to col. 7, line 19, col. 10, lines 15-49 and FIGS. 1(a)-(g)).



Blackwell et al. do not specifically disclose a plurality of thin film electronic devices provided on the insulating polymeric material.

Iwanaga et al. disclose a plurality of thin film transistors (TFTs) **32** provided on the insulating polymeric substrate **31** (see col. 41, lines 49-67 and FIGS. 5A-B).

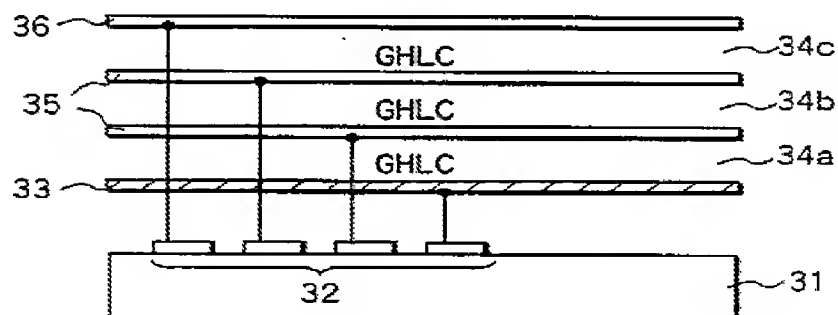


FIG. 5B

As **Iwanaga et al.** disclosed, one of ordinary skill in the art would have been motivated to provide a plurality of thin film electronic devices on the insulating polymeric material in order to obtain a liquid crystal display device capable of realizing a bright and clear color display (see col. 2, lines 42-44 of Iwanaga et al.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant(s) claimed invention was made to modify **Blackwell et al.** reference with a plurality of thin film electronic devices provided on the insulating polymeric material as taught by **Iwanaga et al.** in order to obtain a liquid crystal display device capable of realizing a bright and clear color display (see col. 2, lines 42-44 of Iwanaga et al.).

In re claim 2, as applied to claim 1 above, **Blackwell et al.** in combination with **Iwanaga et al.** disclose all claimed limitations including the limitation wherein the apertures **50** are arranged on a rectangular grid (see col. 7, lines 51-62 and FIGS. 1(a)-(g) of Blackwell et al.).

In re claims 3 and 4, as applied to claim 1 Paragraph 4 above, **Kohara et al.** is silent about wherein the apertures occupy at least about 30 percent or at least about 60 percent of the area of the patterned metal foil.

However, there is no evidence indicating the percentage range that the apertures occupy the area of the patterned metal foil is critical and it has been held that it is not inventive to discover the optimum or workable percentage range of a result-effective variable within given prior art conditions by routine experimentation. See MPEP § 2144.05.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising there from. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen

dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

In re claim 5, as applied to claim 1 above, Blackwell et al. in combination with Iwanaga et al. disclose all claimed limitations including the limitation wherein the patterned metal foil **240** is coated on both sides with an insulating polymeric material **10** (see col. 10, lines 2-14 and FIG. 1(d) of Blackwell et al.). Note that, Applicants' claimed invention does not clearly specify wherein both sides of the patterned metal foil comprise a top side opposite to a bottom side.

In re claim 6, as applied to claim 5 above, Blackwell et al. in combination with Iwanaga et al. disclose all claimed limitations including the limitation wherein the patterned metal foil **240** is coated on both sides with the same insulating polymeric material **10** (see col. 10, lines 2-14 and FIG. 1(d) of Blackwell et al.). Note that, Applicants' claimed invention does not clearly specify wherein both sides of the patterned metal foil comprise a top side opposite to a bottom side.

In re claim 7, as applied to claim 5 above, Blackwell et al. in combination with Iwanaga et al. disclose all claimed limitations including the limitation wherein the patterned metal foil **240** is coated on its two sides with different insulating polymeric materials **10** (see col. 10, lines 2-14 and FIG. 1(d) of Blackwell et al.). Note that, Applicants' claimed invention does not clearly specify wherein both sides of the patterned metal foil comprise a top side opposite to a bottom side.

In re claim 8, as applied to claim 1 above, **Blackwell et al.** in combination with **Iwanaga et al.** disclose all claimed limitations including the limitation wherein each of the thin film electronic devices lies entirely within the area of one aperture **50** in the metal foil **240** (see col. 10, lines 44-49 and FIG. 1(g) of Blackwell et al. and col. 41, lines 49-67 and FIGS. 5A-B of Iwanaga et al.).

In re claim 9, as applied to claim 1 above, **Blackwell et al.** in combination with **Iwanaga et al.** disclose all claimed limitations including the limitation wherein each of the thin film electronic devices extends across a plurality of apertures **50** in the metal foil **240** (see col. 10, lines 44-49 and FIG. 1(g) of Blackwell et al. and col. 41, lines 49-67 and FIGS. 5A-B of Iwanaga et al.).

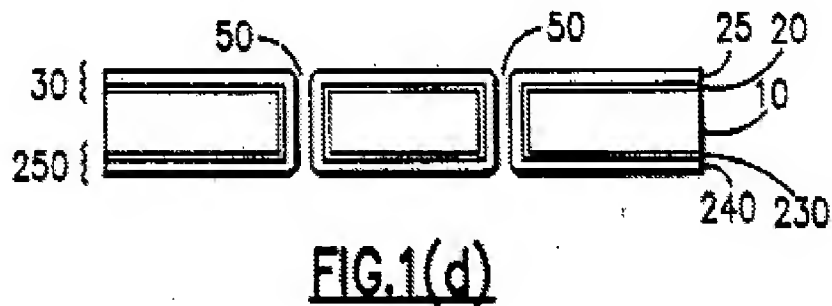
In re claim 10, as applied to claim 1 above, **Blackwell et al.** in combination with **Iwanaga et al.** disclose all claimed limitations including an electro-optic display comprising a backplane according to claim 1 (see col. 10, lines 44-49 and FIG. 1(g) of Blackwell et al. and col. 41, lines 49-67 and FIGS. 5A-B of Iwanaga et al.).

In re claim 11, as applied to claim 10 above, **Blackwell et al.** in combination with **Iwanaga et al.** disclose all claimed limitations including an encapsulated electrophoretic electro-optic medium (see col. 10, lines 44-49 and FIG. 1(g) of Blackwell et al. and col. 41, lines 49-67 and FIGS. 5A-B of Iwanaga et al.).

In re claim 12, **Blackwell et al.** disclose a backplane for use in an electro-optic display, the backplane comprising a metal foil **240** coated on at least one

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side with an insulating polymeric material **10** and having a an integrated circuit device **280** provided on the insulating polymeric material **10**, the backplane further comprising at least one conductive via **50** extending through the polymeric material **10** and electrically connecting at least one of the integrated circuit device **280** to the metal foil **240** (see col. 6, line 62 to col. 7, line 19, col. 10, lines 15-49 and FIGS. 1(a)-(g)),



wherein the metal foil **240** serves as at least one of an antenna, an inductor loop, a power plane, a capacitor, a capacitor contact, a pixel electrode, and electromagnetic induction shielding (see col. 10, lines 2-14).

Blackwell et al. do not specifically disclose a plurality of thin film electronic devices provided on the insulating polymeric material.

Iwanaga et al. disclose a plurality of thin film transistors (TFTs) **32** provided on the insulating polymeric substrate **31** (see col. 41, lines 49-67 and FIGS. 5A-B).

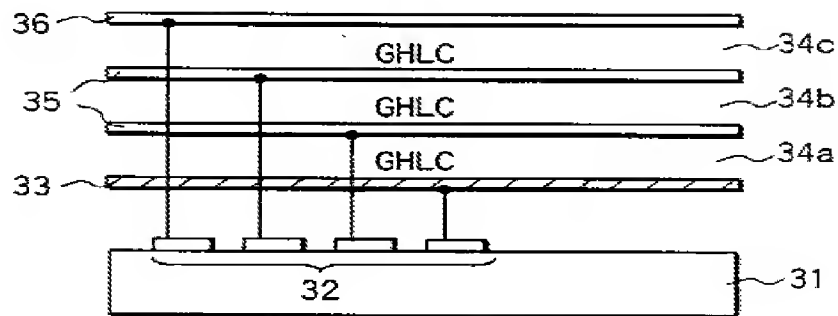


FIG. 5B

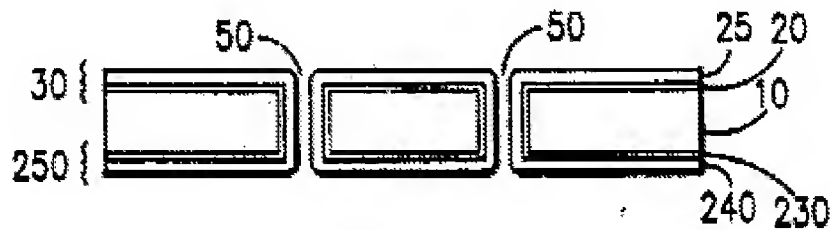
As Iwanaga et al. disclosed, one of ordinary skill in the art would have been motivated to provide a plurality of thin film electronic devices on the insulating polymeric material in order to obtain a liquid crystal display device capable of realizing a bright and clear color display (see col. 2, lines 42-44 of Iwanaga et al.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant(s) claimed invention was made to modify Blackwell et al. reference with a plurality of thin film electronic devices provided on the insulating polymeric material as taught by Iwanaga et al. in order to obtain a liquid crystal display device capable of realizing a bright and clear color display (see col. 2, lines 42-44 of Iwanaga et al.).

In re claim 14, as applied to claim 12 above, Blackwell et al. in combination with Iwanaga et al. disclose all claimed limitations including an electro-optic display comprising a backplane according to claim 12 (see col. 10, lines 44-49 and FIG. 1(g) of Blackwell et al. and col. 41, lines 49-67 and FIGS. 5A-B of Iwanaga et al.).

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In re claim 15, **Blackwell et al.** disclose an electro-optic display comprising a backplane, the backplane comprising a metal foil **240** coated on at least one side with an insulating polymeric material **10** and having an integrated circuit device **280** provided on the insulating polymeric material **10**, the backplane further comprising at least one conductive via **50** extending through the polymeric material **10** and electrically connecting at least one of the integrated circuit device **280** to the metal foil **240**, the electro-optic display having the form a smart card, the metal foil **240** serving to communication between the card and a card reading apparatus (see col. 6, line 62 to col. 7, line 19, col. 10, lines 15-49 and FIGS. 1(a)-(g)).

**FIG.1(d)**

Blackwell et al. do not specifically disclose a plurality of thin film electronic devices provided on the insulating polymeric material.

Iwanaga et al. disclose a plurality of thin film transistors (TFTs) **32** provided on the insulating polymeric substrate **31** (see col. 41, lines 49-67 and FIGS. 5A-B).

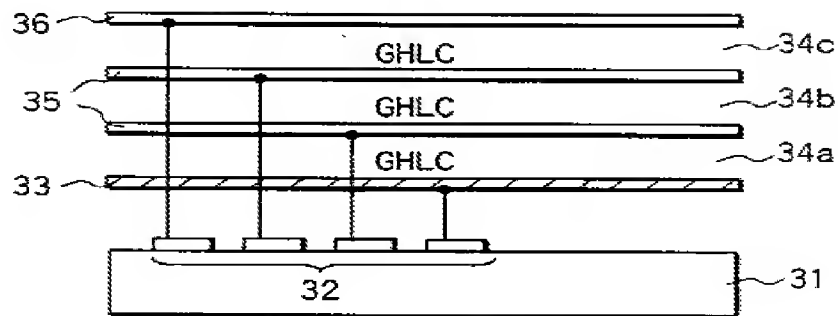


FIG. 5B

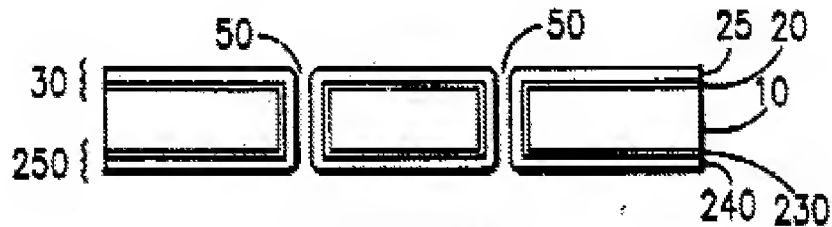
As Iwanaga et al. disclosed, one of ordinary skill in the art would have been motivated to provide a plurality of thin film electronic devices on the insulating polymeric material in order to obtain a liquid crystal display device capable of realizing a bright and clear color display (see col. 2, lines 42-44 of Iwanaga et al.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant(s) claimed invention was made to modify Blackwell et al. reference with a plurality of thin film electronic devices provided on the insulating polymeric material as taught by Iwanaga et al. in order to obtain a liquid crystal display device capable of realizing a bright and clear color display (see col. 2, lines 42-44 of Iwanaga et al.).

In re claim 24, Blackwell et al. disclose an electro-optic display having a metal substrate **40**, the display having a central and a peripheral portion extending around at least part of the periphery of the central portion, the peripheral portion having an aperture **50** extending through the metal substrate

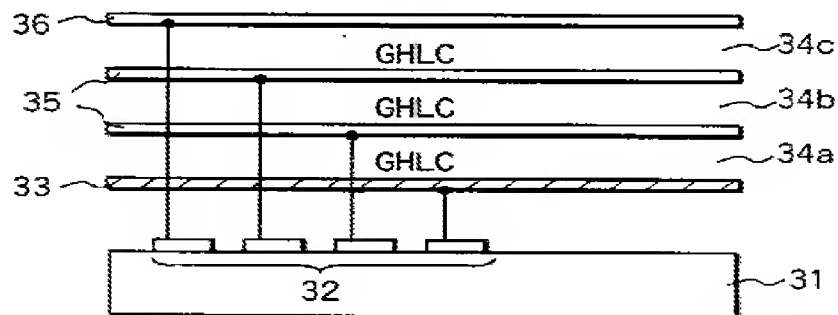
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40, by means of which apertures the electro-optic display may be stitched to a flexible medium (see col. 6, line 62 to col. 7, line 65 and FIGS. 1(a)-(g)).

**FIG. 1(d)**

Blackwell et al. do not specifically disclose that the electro-optic display comprising an electro-optic material and means for wiring an image on the electro-optic material.

Iwanaga et al. disclose an electro-optic display comprising an electro-optic material and means for wiring an image on the electro-optic material (see col. 41, lines 49-67 and FIGS. 5A-B).

**FIG. 5B**

As **Iwanaga et al.** disclosed, one of ordinary skill in the art would have been motivated to provide an electro-optic display comprising an electro-optic material and means for wiring an image on the electro-optic material in order to

obtain a liquid crystal display device capable of realizing a bright and clear color display (see col. 2, lines 42-44 of Iwanaga et al.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant(s) claimed invention was made to modify **Blackwell et al.** reference with an electro-optic display comprising an electro-optic material and means for wiring an image on the electro-optic material as taught by **Iwanaga et al.** in order to obtain a liquid crystal display device capable of realizing a bright and clear color display (see col. 2, lines 42-44 of Iwanaga et al.).

In re claim 25, as applied to claim 24 above, **Blackwell et al.** in combination with **Iwanaga et al.** disclose all claimed limitations including the limitation wherein the peripheral portion of such a display is free from the electro-optic material (see col. 6, line 62 to col. 7, line 65 of Blackwell et al.).

In re claim 26, as applied to claim 24 above, **Blackwell et al.** in combination with **Iwanaga et al.** disclose all claimed limitations including the limitation wherein the peripheral portion extends completely around the central portion so that the entire periphery of the electro-optic display can be stitched to the flexible medium (see FIGS. 1(a)-(g) of Blackwell et al.).

Response to Applicants' Amendment and Arguments

4. Applicants' arguments filed September 22nd, 2009 have been fully considered but they are not persuasive.

Applicants contend that the references Blackwell et al. (U.S. Patent 5,288,541) in combination with Iwanaga et al. (U.S. Patent 6,033,742), herein known as **Blackwell** and **Iwanaga**, does not describes a structure comprising a patterned metal foil as that term is used in the present claims.

Specifically, Applicants stated that "A typical dictionary definition of "foil" is "a very thin sheet or leaf of metal" (taken from Webster's New Twentieth Century Dictionary", Collins World, 1976). Whatever the exact words used to define "foil" it is surely inherent in the term that the foil be continuous in the topological sense."

In view of the above, Applicants contend that **Blackwell** does not describe any structure which has, at the same time, a patterned metal foil, a coating of an insulating polymeric material and a thin film electronic devices on the polymeric material.

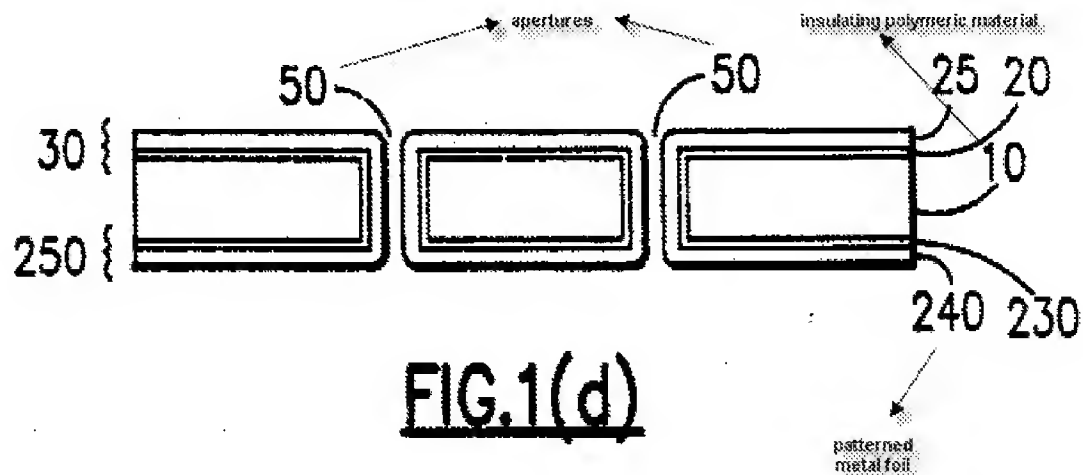
In response to Applicants' contention that **Blackwell** in combination with **Iwanaga** does not teach or suggest a patterned metal foil having a plurality of apertures extending therethrough, coated on at least one side with an insulating polymeric material and having a plurality of thin film electronic devices provided on the insulating polymeric material, Examiner respectfully disagrees.

Applicants' attention is respectfully directed to (col. 6, line 62 to col. 7, line 19, col. 10, lines 15-49 and FIGS. 1a-g) where **Blackwell** discloses a backplane comprising a patterned metal foil **240** having a plurality of apertures **50** extending therethrough, coated on at least one side with an insulating polymeric material

10, and having an integrated circuit device **280** provided on the insulating polymeric material **10** (see col. 6, line 62 to col. 7, line 19, col. 10, lines 15-49 and FIGS. 1(a)-(g)).

It is respectfully submitted that a foil is a very thin sheet of metal (normally made with malleable metals such as copper, aluminum, tin and gold).

Blackwell, particularly, discloses in (col. 10, lines 10-14) providing a metal foil **240** (thin copper film) having a thickness ranges from about 3,000 Å to about 10,000 Å. This copper foil is photolithographically patterned (see col. 10, lines 15-24) and subsequently to the patterning process, an electroplating techniques are used to deposit additional copper onto the side walls of the through holes **50** (see col. 10, lines 38-43) as illustrated in FIG. 1(d).



Thus, **Blackwell** discloses a backplane as shown in FIG. 1(d) comprising a patterned metal foil **240** having a plurality of apertures (through-holes) **50** extending therethrough, coated on top side with an insulating polymeric material

10 and having electronic device **280** provided on the insulating polymeric material **10**.

Since **Blackwell** discloses a backplane comprising a patterned metal foil that is identical to that of Applicants' claimed invention and the secondary reference to **Iwanaga** discloses a plurality of thin film transistors (TFTs) **32** provided on the insulating polymeric substrate **31** (see col. 41, lines 49-67 and FIGS. 5A-B). It would have been obvious to one having ordinary skill in the art at the time of Applicants' claimed invention was made to modify **Blackwell et al.** reference with a plurality of thin film electronic devices provided on the insulating polymeric material as taught by **Iwanaga et al.** in order to obtain a liquid crystal display device capable of realizing a bright and clear color display (see col. 2, lines 42-44 of Iwanaga et al.).

Applicants further contend that the metal foil in the Applicants' claimed invention is continuous and mechanically coherent. However, it is noted that the feature upon which Applicants rely is not recited in the rejected claim(s). Note that, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

For this reason, Examiner holds the rejection proper.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHIEM D. NGUYEN whose telephone number is (571)272-1865. The examiner can normally be reached on Monday-Friday (9:00 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Khiem D. Nguyen/
Primary Examiner, Art Unit 2823
December 20th, 2009